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Review of progress in implementing the decision of the thirteenth session of the Commission on Sustainable Development on water and sanitation

Report of the Secretary-General

Summary

In line with the decisions of the thirteenth session of the Commission on Sustainable Development, countries have implemented wide-ranging policies to enhance access to safe drinking water and basic sanitation, as well as to promote the adoption of the integrated water resources management framework. Results have been mixed. The world may meet the Millennium Development Goals target on safe drinking water but current trends do not support meeting the sanitation target. Many countries have included water and sanitation actions in their Poverty Reduction Strategy Papers — in some cases more prominently than others. Much more needs to be done for systematic scaling up of infrastructure, rehabilitation of deteriorated water supply systems, capacity-building, ensuring adequate financial support and strengthening capacities of the public utilities.

Countries are implementing water management measures that are important in their own national contexts. Not only do these efforts need to be sustained, but countries need to be better informed as to how integrated water resources management can help them achieve broader development goals. Strengthening monitoring mechanisms for integrated water resources management and provision of

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service is vital for rational decision-making with regard to future investments in the water and sanitation sector. Finally, meeting water and sanitation goals requires that the Governments, the private sector and civil society must raise the priority attached to them in their development plans.

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I. Introduction

1. The present report reviews the progress made in implementing decisions on water and sanitation adopted at the thirteenth session of the Commission on Sustainable Development. The decisions were based on two major priorities of the Johannesburg Plan of Implementation: access to water and sanitation services, and the preparation of national integrated water resources management and water efficiency plans. While recommending various policy options and practical measures for expediting implementation, the Commission stressed the need for increased investments in water and sanitation, recognizing that provision of sustained water and sanitation services contributes to sustainable development, including economic growth, improved health and reduced poverty. Agreed policies and measures and some best practice examples discussed at the thirteenth session of the Commission on Sustainable Development can be found in the Report on the Thirteenth Session of the Commission on Sustainable Development (11-22 April 2005),[1] and the User-Friendly Matrix of the Chair's Intergovernmental Preparatory Meeting Summary.[2]

2. Information for this report has been drawn from various sources including the:

(a) Joint Monitoring Programme (JMP) of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF);

(b) United Nations World Water Development Report, published by UN-Water;

(c) Human Development Report (2006);

(d) National Progress Reports on Millennium Development Goals;

(e) Poverty Reduction Strategy Papers;

(f) country responses to the integrated water resources management questionnaire developed the UN-Water Task Force on integrated water resources management; and

(g) reports from major groups.

II. Review of progress

3. Progress reported has been grouped under four thematic areas: access to safe drinking water and basic sanitation; integrated water resources management; water sector monitoring; and financing for water and sanitation services. Examples cited are programmes and projects that have been implemented in areas such as capacity-building, technology transfer, partnerships, strengthening of public water utilities, and decentralization of water services and governance. Case studies demonstrating why some policy options have been more effective than others are noted. The main issues and obstacles to the implementation of agreed decisions are evaluated and some solutions to overcome these constraints are identified.

[1] *Official Records of the Economic and Social Council, 2005, Supplement No. 9* (E/2005/29).
[2] http://www.un.org/esa/sustdev/csd/csd13/matrix.pdf.

4. This report also provides a preliminary analysis of the state of preparation and implementation of integrated water resources management plans. It reports on the range of institutional and regulatory measures and programmes countries are implementing to improve water governance, ensure efficient water allocation among different uses, enhance the sustainability of ecosystems and raise awareness of the importance of efficient water use and conservation. It also presents a succinct overview of various actions undertaken to enhance monitoring of both water resources and water services, as well as of financial flows to the sector, and the challenges involved.

A. Access to water and sanitation services

5. The current trends with regard to gaining access to safe drinking water and basic sanitation present a mixed picture, but one that shows signs of improvement. Tables 1 and 2 show that, in order to meet the Millennium Development Goal targets, over 80 million people per year need to gain access to water and over 120 million people per year need to gain access to sanitation over the period 2005-2015.

6. In the light of progress made by some large countries in Asia, such as China, India and Pakistan, the world in general seems on track with regard to halving the number of people without access to safe drinking water. In the case of sanitation, however, trends are less promising. Among the regions, sub-Saharan Africa is lagging far behind on the targets, and would need to double the number of people gaining access to safe drinking water each year and quadruple the number currently gaining access to sanitation to meet internationally agreed targets. This will require substantial financial support by external partners as well as strong political commitment by Governments to infrastructure development and rehabilitation.

7. Countries have made progress in reflecting water and sanitation in their national development strategies, but much remains to be done before national policies and legislation on water and sanitation can be said to reflect international goals and objectives. Programmes to promote water and sanitation infrastructure in rural areas are, unfortunately, still being driven by top-down, technology and target imperatives, rather than by bottom-up measures which are inclusive of those who most need it.

8. Despite the level of current efforts to meet the Millennium Development Goals, this target represents only a minimal goal to achieve universal access. Even if these targets are met, there will still be some 900 million people lacking access to safe drinking water and 1.3 billion lacking access to improved sanitation in 2015. Within this somewhat gloomy aggregate picture, however, there are some bright spots and many examples of good practices that implement the recommendations of the thirteenth session of the Commission on Sustainable Development. These are highlighted in the subsequent sections.

1. Access to safe drinking water

9. Available data show that the countries of South Asia, Latin America, the Caribbean, East Asia and the Pacific are on track or nearly on track for meeting water supply targets, while West Asian States and sub-Saharan Africa are lagging behind (table 1). In 1990-2004, countries in sub-Saharan Africa increased coverage

rates for safe drinking water by an average of 10.5 million people per year. To meet the 2015 targets, taking into account population growth rates, the region would have to more than double this level to 23 million per year over the next decade. Thus, efforts in sub-Saharan Africa need to focus on a systematic scaling up of infrastructure, rehabilitation of deteriorated water systems, capacity-building and financial support. Equally important is a strong political commitment demonstrated through increased allocation of resources in national budgets.

10. Some of the world's most populous developing countries, including Brazil, Egypt, India, Mexico, Myanmar, Pakistan, Thailand, Turkey and Viet Nam, have managed to exceed their targets for providing access to safe drinking water, and are well on their way to achieving universal access by 2015.[3] China, with its huge population, has more than kept pace with population growth, and has made particular progress with house connections in rural areas. Smaller countries (under 30 million people) which have also registered good progress include Afghanistan, Angola, Burkina Faso, Cambodia, Cameroon, the Central African Republic, Chad, Ecuador, El Salvador, Eritrea, Ghana, Guatemala, Mali, Mauritania, Namibia, Nepal, Paraguay and the Syrian Arab Republic.[4] Rural-urban disparities continue to persist, but evidence shows that countries that have concentrated on both rural and urban areas have registered significant progress in the provision of water services.

Table 1
Safe drinking water: past performance and future targets

	People with access to improved water source (millions)			*Average annual number of people (millions)*	
Region	*1990*	*2004*	*Target 2015*	*Gaining access 1990-2004*	*Needing access to meet target, 2004-2015*
Sub-Saharan Africa	226.6	383.8	627.1	10.5	23.1
Arab States	180.1	231.8	335.8	4.7	6.5
East Asia and Pacific	1 154.4	1 528.2	1 741.2	22.9	24.3
South Asia	840.6	1 296.4	1 538.1	32.5	22.1
Latin America and Caribbean	334.3	499.0	527.8	9.0	6.1
World	2 767.7	4 266.4	5 029.5	79.5	82.4

Source: UNDP, *Human Development Report*, Palgrave Macmillan, Basingstoke, United Kingdom, 2006, p. 56 (based on JMP figures).

11. Many countries have prioritized provision of water and sanitation services in their national development plans and Poverty Reduction Strategy Papers. In some cases, however, the prioritization is more evident than others in terms of resource allocations from national budgets. Some examples of countries that have allocated a significant budget for water projects in their national development plans include Bangladesh, Cameroon, Kenya, Malawi, South Africa, Uganda and Viet Nam. This commitment enabled some of these countries to secure additional sources from

[3] WHO and UNICEF, Joint Monitoring Programme Report, p. 8, 2006.

[4] The countries listed have improved access to water supply by at least 4 percentage points during the period 2000-2004. Country data at www.wssinfo.org.

external development partners. Several countries that are classified as heavily indebted poor countries (HIPC), including Burkina Faso, Cameroon, Ethiopia, Nicaragua and the Niger, have allocated HIPC funds for water supply and other hydraulic projects. However, public spending on water and sanitation typically represents less than 0.5 per cent of a country's gross domestic product, despite country-led efforts to include water and sanitation in Poverty Reduction Strategy Papers and poverty diagnostics.[5]

12. With regard to the Commission recommendation that countries provide support for water infrastructure planning and development, it has been noted in development plans and Poverty Reduction Strategy Papers that various countries are pursuing different strategies and priorities. Some countries (e.g., Albania, Armenia and Tajikistan) are focusing on rehabilitation of aging infrastructure, in order to improve water quality and water treatment. Similarly, some countries which were having difficulty in improving access, such as Georgia and Kyrgyzstan, noted that aging infrastructure had led to deterioration in the efficiency of water supply systems. Other countries, such as Cambodia, Cape Verde, Mauritania, Mexico, Niger and Senegal, have focused on improving access to drinking water in urban areas by extending the distribution grid through house connections and the installation of standposts. Kenya's Poverty Reduction Strategy Papers noted the rehabilitation of rural water supply systems and the provision of pumping and generating sets to small towns for improved water supply. Others, including Burkina Faso and Zambia, are concentrating on construction and rehabilitation of small dams, storage reservoirs and boreholes. Viet Nam supported efforts to improve waterways and irrigation. It is noteworthy that all of these countries were very conscious of the need for improving water infrastructure in their efforts to reduce poverty in urban and rural areas.

13. Countries are adopting a wide range of policy instruments, covering regulations and economic incentives, among others, for improving the sustainability of service provision. For example, Albania, Armenia and Montenegro are reviewing and revising their tariff and subsidy policies for water and sanitation in order to reduce Government subsidies and improve cost recovery through proper metering and tariff collection. At the same time, they are working on improving the technical capacity of staff in the water utilities and ministries. Similarly, economic incentives are provided in Kyrgyzstan for long-term investment in environmental protection, and connecting the community with the ecosystem. Montenegro has introduced market-based principles, including user-pay and polluter-pay principles, supplemented by reforms promoting equitable access to drinking water and protection of water sources.

2. Access to basic sanitation services

14. The situation regarding access to basic sanitation is much worse than for water, with only Latin America and the Caribbean countries on track to meet the Millennium Development Goals target, and East Asia and the Pacific moving close to the targeted yearly access figures. Again, the main challenge is faced by sub-Saharan Africa, which would need to increase the number of people gaining access to sanitation each year by four times the current rate to be on track to meet

[5] World Bank, Water and Sanitation Programme Africa. Water Supply and Sanitation in Poverty Reduction Strategy Papers: Benchmarking Performance, 2007.

this goal. South Asia also lags behind on sanitation, and would need to increase the current rate of those gaining access by 72 per cent per year to meet the target.

Table 2
Access to basic sanitation: past performance and future targets

	People with access to improved sanitation (millions)			*Average annual number of people (millions)*	
Region	*1990*	*2004*	*Target 2015*	*Gaining access 1990-2004*	*Needing access to meet target, 2004-2015*
Sub-Saharan Africa	148.4	256.5	556.0	7.2	27.9
Arab States	120.6	196.0	267.2	4.9	6.9
East Asia and Pacific	467.0	958.2	1 284.9	32.0	33.6
South Asia	242.9	543.8	1 083.3	24.7	42.5
Latin America and Caribbean	279.6	423.2	492.2	8.6	8.4
World	1 456.9	2 663.9	3 094.0	77.5	120.4

Source: UNDP, *Human Development Report*, 2006, p. 56.

15. Given the linkages among water, sanitation, hygiene and health, and the positive impact of access to sanitation on poverty reduction, privacy, dignity, security and education, meeting the Millennium Development Goals target would avert 470,000 deaths and result in an extra 320 million productive working days every year.[6] The lack of safe water and adequate sanitation in regions lagging behind exacts a high economic cost, particularly for the poorest, mostly women.

16. Several countries undertook efforts to implement the Commission recommendation to establish an institutional home for sanitation and prioritize sanitation in national development plans. Senegal has established a Ministry of Prevention, public hygiene and sanitation, and has made it a Government priority to increase rates of sanitation service coverage over the medium and long terms and in rural as well as urban areas. Nigeria developed a National environmental sanitation policy and action plan. Thailand has incorporated a Rural environmental sanitation programme into its national economic and social development plans for the past 40 years, and Bangladesh and other South Asian countries have introduced Total sanitation campaigns at specific locations.

17. Least developed countries with low levels of sanitation coverage, such as Ethiopia, are focusing public spending on providing basic, low-cost sanitation facilities for those currently without access (see box I). In cities, a high-impact low-cost approach promotes education and information on hygiene and sanitation in schools and public gathering places.

[6] WHO: Health through Safe Drinking Water and Basic Sanitation. http://www.who.int/water_sanitation_health/mdg1/en/index.html.

Box I
Strategy to achieve universal access to sanitation in Ethiopia[7]

Ethiopia has initiated a strategy and programme to achieve universal access to improved sanitation and hygiene by 2012. The solid national commitment to sanitation is reflected in the National hygiene and sanitation strategy; the Sanitation protocol; a Memorandum of understanding among the Ministries of Education, Health and Water Resources; the Universal access policy; and a Health extension package. The health service extension programme under the Ministry of Health includes training 30,000 health extension workers (2 per community or administrative unit), along with equipping health points and other measures. Various stakeholders are working together, and access to sanitation services (from a very low base) appears to be taking off. In addition, NGOs and donor organizations are working together to improve water and sanitation in 60 per cent of the primary schools in Ethiopia by the end of 2007.

18. Nepal's development policy calls for each new water supply project to include a sanitation component, and recognizes sanitation and health are integral parts of any water supply project. This is particularly important in a country with a fragile mountain ecosystem. Other countries, including Moldova and Montenegro, are concentrating resources on collection and treatment of wastewater, disposal of liquid wastes and rehabilitation and construction of sewerage systems.

19. Successful high-profile international campaigns that focus on sanitation, such as the School Sanitation and Hygiene Education (SSHE)[8] and Water, Sanitation and Hygiene (WASH),[9] have been introduced by United Nations agencies and partners to support national efforts. The "WASH in schools" campaign has resulted in the development of the "Manual on school sanitation and hygiene education".[10] This implements the Commission's recommendation that countries prioritize sanitation investments in schools, and places an emphasis on children and youth, incorporates gender-sensitive hygiene education in school curricula and ensures the separation of sanitation facilities for boys and girls in all schools.

Box II
Evaluation of school sanitation and hygiene education programme

A six-country SSHE project was carried out during the period 2000-2004 with local partners from Burkina Faso, Colombia, Nepal, Nicaragua, Viet Nam and Zambia. An assessment of 8 to 64 pilot schools in each country was carried out starting in 2005, comparing them with control schools not in the pilot programme. It was found that water facilities in more than 80 per cent of the pilot schools were still in

[7] Helen Pankhurst, Ethiopia Water and Sanitation Sector: Progress towards Targets for Water and Sanitation MDGs, DfID, 2007.

[8] http://www.2.irc.nl/sshe.

[9] The WSSCC has launched its WASH campaign in over 70 countries. www.wsscc.org.

[10] UNICEF and IRC. Water, Environment and Sanitation Technical Guidelines Series, No. 5, 1998.

working order 12 to 18 months after the project had finished. One problem that remained in most schools had to do with the availability and use of soap. The project schools also performed much better than control schools for indicators such as the cleanliness and effective use by children of toilets and urinals. This provided evidence of the effectiveness of a good SSHE programme, and suggests that benefits continue beyond the end of the project period. Annual per child costs of the programme ranged from $2.40-$16. The differences in cost had to do with water availability; construction quality and design; whether new or renovated facilities were used; and, to some extent, local management inefficiencies. Costs were generally lower in Asia than in Africa and Latin America.

Source: IRC and UNICEF, School sanitation and hygiene education: results from the assessment of a six-country pilot project, May 2006.

20. Effective national campaigns, such as those carried out in Bangladesh, India, Senegal and South Africa, can be used as models for other countries. The Total sanitation campaign in Bangladesh has been scaled up from a community-based project to a national programme that is achieving rapid increases in access to sanitation. The programme aims to eliminate open defecation and promote good personal hygiene practices, including hand-washing after latrine use, well-managed latrines and water points. The approach recognizes and promotes indigenous knowledge, values and traditions, and explores local skills and technologies. Not only has it been very successful in Bangladesh itself, but similar programmes are being adopted in countries such as Cambodia, China, Indonesia, Mozambique, Nepal, Nigeria, Uganda and Zambia.

21. In India and Pakistan, slum dwellers' associations have collaborated to bring sanitation to millions of people. The National slum dwellers' federation in India and the Orangi pilot project in Pakistan, among many other community organizations, have shown the potential of communities to mobilize resources.[11]

22. Decisions taken at the thirteenth session of the Commission on Sustainable Development on promoting gender-sensitive sanitation and hygiene education programmes, including through public information campaigns such as Water, sanitation and hygiene for all, have resulted in 70 countries, mainly in Africa and Asia, launching national WASH campaigns. The Water supply and sanitation collaborative council recently created a sanitation grants programme to provide financial support for scaling up the provision of sanitation services and hygiene promotion programmes. This programme targets poor populations that lack basic sanitation.[12]

23. Gender inequalities help to explain the low demand for sanitation in many communities. Evidence from Cambodia, Indonesia and Viet Nam indicates that women place a higher value on access to private sanitation facilities than men.[13] But

[11] UNDP, Human Development Report, p. 12, 2006.

[12] WSSCC, Putting People at the Centre, August 2007. Available at www.wsscc.org.

[13] Nilanjana, Mukherjee, "Achieving Sustained Sanitation for the Poor. Policy and Strategy Lessons from Participatory Assessments in Cambodia, Indonesia, Vietnam", WSP-East Asia and the Pacific, Jakarta, 2001.

women often have little control over expenditures at the community and household level. Thus, the priority that women attach to sanitation may not be adequately reflected in decision-making at the village level, in local government or at the national level.

24. Provision of sanitation services is often portrayed as a sanitation "ladder", ranging from the most basic pit latrines to improved pit latrines, to pour-flush toilets using water and septic tanks, to conventional sewers. In terms of low-cost options, many countries are pursuing on-site sanitation options, separate programmes for schools and health clinics; public toilets for slum areas; and community-based NGO-supported programmes. In general, household sanitation facilities are most often financed by the household itself, while the installation of sewerage and wastewater treatment systems are normally included in municipal or community budgets. Cost recovery is frequently pursued by combining water and sanitation services in a single bill, but it is achieved only partially.

25. Much of sub-Saharan Africa has low-coverage sewerage networks, with less than 10 per cent of the urban population connected. Also, in middle income countries, such as Indonesia and the Philippines, sewerage coverage in large cities such as Jakarta and Manila is quite low (8 to 10 per cent). In Jakarta and Manila, limited coverage has given rise to a highly developed infrastructure of pit latrines and septic tanks. Though this ensures removal of waste from households, much of it ends up in rivers, causing serious damage to freshwater resources. In many cities of Africa and Asia, pit latrine infrastructure is more developed than the waste treatment and disposal infrastructure, but emptying latrines in densely populated urban areas requires an extensive service infrastructure, including proper disposal facilities.

26. There is some evidence that countries are employing economic incentives to encourage the participation of small-scale sanitation and hygiene service providers. Under the Total Sanitation Campaign in Bangladesh, a small business sector specializing in producing, marketing and maintaining low-cost latrines has arisen. The number of registered small-scale latrine production centres rose from 2,400 in 2000 to over 3,000 by 2005, demonstrating the capacity of small-scale providers to respond to local needs. The cost of latrines has fallen, and NGOs have provided microfinance loans to cover costs. The National policy for water and sanitation established a policy framework for partnerships of small-scale entrepreneurs and community groups making rural sanitation a priority and providing support for marketing and training through local and national Government agencies.[14]

27. Reviews of the current state of implementation suggests that, as noted in the case of HIV/AIDS campaigns, progress remains slow until political leaders, civil society, the media and ordinary people start speaking openly about the problem and its consequences. Sending strong and clear messages about the benefits of investing in water and sanitation services can help influence behaviour and mobilize public support for investments to improve the situation.

[14] Kar, Kamal, and Katherine Pasteur. "Subsidy or Self-respect? Community-Led Total Sanitation. An Update on Recent Developments." Working Paper 257. University of Sussex, Institute of Development Studies, Brighton, UK, 2005.

3. Institutional and policy frameworks

28. Inadequate institutions, fragmented responsibilities, lack of appropriate laws and policies and a shortage of funds were cited in national reports as constraints to effective investment in building human capacity and physical infrastructure, as well as improving water governance. Many countries have started to respond to these constraints by instituting policy reforms and developing their own integrated water resources management plans (see sect. B below). Others have responded by improving water governance through strengthening institutional and regulatory frameworks, capacity development and innovation. See Box III for examples.

Box III
Policy reforms in water and sanitation sector under Poverty Reduction Strategy Papers

Albania has prepared its Water supply and wastewater strategy to tackle problems of intermittent water supply and poor water quality.

Burkina Faso and **Thailand** have created National water councils or committees, which include the heads of relevant ministries, to coordinate and develop water policy and management.

Guyana established Guyana water incorporated to improve water and sanitation services in urban areas, including the treatment of raw water, and to implement a comprehensive rehabilitation and maintenance plan.

Kenya reformed its water sector in 2004-2005. The reform involved handing water supply schemes to communities; rehabilitation and expansion of water supply and sanitation in urban areas; and the creation of a Water services regulatory board, Water services trust fund and Water resources management authority.

Moldova has revised regulations on collection of wastewater because of serious water quality problems.

Nepal's Rural water supply and sanitation national policy and strategy was revised in 2004 to encourage community participation in decision-making, cost recovery of operation and maintenance expenses and to involve women and disadvantaged groups in benefit-sharing as well as in decision-making.

Zambia in 2003 began to implement its Water resources action plan, which followed a review of the sector's legal and institutional framework.

Source: Country Specific National Poverty Reduction Strategy Papers.

29. An important challenge for Governments of developing countries is to strengthen sector governance at the local level, in particular, the inadequate capacities of operators responsible for delivering water and sanitation services.

30. Designing tariffs and subsidies for water has proven to be a challenge almost everywhere, due to conflicting economic objectives, social constraints and incentive

problems linked to the nature of the industry. Evidence shows that water tariffs in developing countries remain far below cost recovery levels, though to varying degrees in different countries. A global survey of water utilities shows that only 39 per cent of utilities were charging tariffs that allowed them to fully recover short-run and long-run costs.[15] Even in countries which are member States of the Organization for Economic Cooperation and Development (OECD), only half of the utilities achieved this target. Among the utilities surveyed in Africa, none recovered even their operating and maintenance costs. China's Rural water supply and sanitation programme is referred to as an example of high payment compliance, with households metered and a strong incentive system, whereby the salaries of the operations staff are tied to monthly bill collection. Payment compliance is high, usually over 90 per cent. When existing tariffs do not cover operating costs, they are raised. Although the focus, and indeed the success, of this approach is overwhelmingly economic, there is some provision for fairness in the pricing structure. For example, households with individual piped water connections pay more than households receiving lower levels of service.

31. In general, consumption subsidies delivered through low tariffs did not benefit the targeted poorest households, while cross-subsidy schemes remained plagued with other problems. However, there are some positive experiences. Indonesia provides energy subsidies for its water supply programme. The EU Water Initiative has proposed a Euro-Mediterranean water and poverty facility for countries on the Mediterranean Sea, providing economic assistance, including subsidies, for securing a minimum amount of safe water per capita in urban areas. Burkina Faso's public water and sanitation utility levies a small sanitation surcharge on water users, with the proceeds financing social marketing of sanitation and construction of improved sanitation facilities in low-income areas, such as in all primary schools in Ouagadougou. Households are eligible to receive financial aid for improved pit latrines and pour-flush latrines, but they must finance 70-80 per cent of the cost of sanitation facilities.[16] These costs are high given the resources of low-income people, so the very poorest households may not be reached.

4. Partnerships for capacity-building and technology transfer

32. About 90 per cent of water utilities in developing countries are publicly managed, but these utilities often lack capacities to expand the provision of sustainable services. To address this challenge, the Hashimoto Action Plan[17] promoted the need for establishing Water Operators Partnerships.

33. The Water Operators Partnerships promotes utility-to-utility partnership, in many cases on a South-South cooperation basis, but includes North-South cooperation to facilitate sharing experiences, technology transfer, information exchange and a low-cost way of filling the capacity gaps. This idea is gaining momentum in various regions; however, some regional partnerships are more advanced than others. Examples of existing partnerships include: the Inter-American Sanitary and Environmental Engineering Association, an association with outreach

[15] Global Water Intelligence, 2004: Quoted in Kmives et al.: Water, Electricity and the Poor — Who Benefits from Utility Subsidies?, World Bank, 2005.

[16] Water and Sanitation Program-Africa. Mobilizing Resources for Sanitation. Field Note Nairobi, World Bank, 2004.

[17] For details of Hashimoto Action Plan: http://www.unsgab.org.

in 32 countries in Latin America and the Caribbean; the South East Asian Water Utilities Network, which comprises a network of 47 water utilities; Arab Water Utilities Network; and the African Water Association. The United Nations Human Settlements Programme (UN-Habitat) is supporting a secretariat to strengthen the capacities of global Water Operators Partnerships mechanisms to facilitate further interaction among regional and subregional Water Operators Partnerships.

34. Such partnerships are seen as a viable alternative to private sector participation in the provision of water and sanitation services. These can take many forms, under various arrangements such as concessions, delegated management (as is the case in South Africa), or urging the private sector to extend networks through output-based schemes, which seem to have been relatively successful in Viet Nam and Paraguay. The privatization of the East zone of Manila shows some possible benefits of private sector participation. In general, the success of privatization is considered to be largely due to successful management, which focused on both business and social and environmental goals. On the other hand, Bolivia has experienced several serious conflicts over water. The Government withdrew some concessions granted earlier and has adopted a new approach that gives priority to human consumption and water uses for agriculture and food security. From 1990-2005, 55 countries (representing 383 projects) introduced some form of private sector participation in the water sector.

35. A recent review[18] of private sector participation experiences noted that private sector participation has not achieved the desired results, and examples of failure and difficulty in the private water sector are increasing. Difficulties include reconciling the diverging interests of the public sector, the private sector and water consumers. Moreover, the private sector is said to be using the same sources of funds as the public sector — loans from donors, aid money and tariff revenue from customers.

36. Capacity-building has continued to receive greater attention in technical assistance programmes. For example, Japan has established a technical training programme for arid and semi-arid countries, including Ethiopia, Mali, Mauritania, Senegal, the United Republic of Tanzania and Zambia. Similar assistance is being provided by the Czech Republic to drought-stricken areas of Ethiopia on groundwater resources investigation and development of basic water management tools for use in drought-prone areas. The Southern African Development Community, in its programme for regional integration through cooperation on international rivers, has developed a Regional strategic action plan for water management, 2005-2010. It focuses on water resources development through monitoring and data collection, infrastructure development (water supply schemes for small border towns and villages), capacity-building (to strengthen river basin organizations) and water governance. Each basin has its own projects, involving national committees, a technical committee, river basin organizations and implementing agencies.[19]

37. Many countries have reported specific programmes for capacity-building in water and sanitation in their Poverty Reduction Strategy Papers. For example, Guyana, Lesotho, Malawi, the United Republic of Tanzania and Viet Nam have targeted their capacity-building programmes towards improvements in monitoring

[18] United Nations Research Institute in Social Development. Social Policies and Water Sector Reform: Programme Paper 3, September 2007 (by Naren Prasad).

[19] UNDP, Human Development Report, p. 227, 2006.

and evaluation of water projects, while Kenya, Nepal and Rwanda focus on decentralized decision-making at the community level and encourage participation by community and private providers. Capacity-building efforts in Albania, Azerbaijan, the Kyrgyz Republic, Mongolia and Montenegro are aimed at securing improvements in environmental management and protecting water quality. In Nicaragua, access to safe water in remote rural areas is considered a component of human capital development.

38. Research and technology transfer in priority areas such as improved water efficiency, water management for rain-fed farming and poverty reduction impacts also received some attention in development cooperation programmes. Partnerships between research institutions, Governments and the private sector can further benefit the development and dissemination of low-water-use technologies.

39. Despite the above-noted positive examples, much of the national and international effort to accelerate progress in water and sanitation remains fragmented. The water and sanitation sector has not attracted large amounts of financing, in contrast to the international response for, HIV/AIDS and education. Having pledged a Water Action Plan at its Summit in Evian, France in 2003, the G-8 has not subsequently made water and sanitation a priority in its development agenda. A number of players have called for the development of a global action plan to serve as a forum for public advocacy and political efforts in mobilizing aid, supporting Governments of developing countries in drawing on local capital markets and enhancing capacity-building in water and sanitation.[20] A global plan is not a substitute for local action, but it could build on good policies and serious intent to deliver at the national level.

B. Integrated water resources management

40. Approaches to integrated water resources management are diverse and varied. Specific water resources problems and conditions determine priorities in each country, and the final choice of management solution depends on local culture, tradition and capacity. However, an enabling environment constituting necessary environmental, economic, social, cultural, political and institutional conditions is considered vital to advance the implementation of integrated water resources management. This section provides an initial assessment of the state of implementation of integrated water resources management plan preparation, based on feedback provided by various Governments to a survey questionnaire as part of their national reporting to the Commission on Sustainable Development.[21]

1. Preparation of integrated water resources management/water efficiency plans

41. In the absence of well-established, globally accepted indicators for monitoring integrated water resources management, it is difficult to state with certainty the status of integrated water resources management in each country, and to make comparisons across countries. Each country is at a different point of the integrated water resources management implementation stage, depending upon the nature of its

[20] UNDP, Human Development Report, p. 70-71, 2006; and Water Aid contribution to Commission on Sustainable Development-16.

[21] The UN-Water Task Force on IWRM developed a questionnaire which was sent to all countries by the CSD Secretariat. A total of 58 countries responded.

problems and its own understanding of the integrated water resources management framework. The results of the survey and a review of many case studies and country progress reports on Millennium Development Goals highlight certain general trends on the status of integrated water resources management plan preparation.

42. A number of countries that have developed and implemented integrated water resources management plans report that it is too early to assess the results and impact of implementing these plans. Nevertheless, some countries have indicated that this approach has helped in achieving notable results in terms of reduction in water losses; improvement in water quality; flood control; improved restoration of aquatic ecosystems; and expansion in water supply coverage.

43. The process of preparing a water management plan, river basin plan or national water policy is usually led by a government ministry or council comprising a number of ministries. Only a few countries have promoted stakeholders participation in preparing the integrated water resources management plans.

44. Countries that have made some progress in implementing integrated water resources management plans have identified the following five major issues addressed:

(a) pollution control to improve water quality;

(b) inefficient use, waste and competition among various uses;

(c) degradation of ecosystems;

(d) natural disasters, floods and droughts; and

(e) water scarcity.

45. Key policy actions and measures that were taken or are being implemented to address these issues include:

(a) establishment of a coordinating body or mechanism;

(b) enactment of water codes, laws and regulations;

(c) rationalization of pricing policies and subsidies together with polluter pays principle;

(d) enforcement of regulatory regimes, including permits and licenses; and

(e) strengthening data-collection networks, monitoring and evaluation.

46. The survey results show that, in addition to the above policy measures, countries are implementing actions to varying degrees on both the demand and supply sides to improve the management of water resources. Notable measures include: construction of infrastructure and storage; demand-reduction through water pricing policies, and water-saving infrastructure (such as drip irrigation); recycling and reuse of treated effluent; protection of water sources through regulatory mechanisms; and upgrading of existing infrastructure and distribution systems.

47. Many countries indicate that they have implemented, either fully or partially, various programmes and policies that may constitute important building blocks of full-fledged planning for integrated water resources management.

48. Issues of transboundary integrated water resources management plans, desalination of seawater, rainwater harvesting programmes, initiatives on water

harvesting from coastal fog and integration of drainage facilities in irrigated agriculture did not feature prominently among the priorities of many countries, especially OECD countries.

49. More than half of the respondent countries indicated that cost recovery or progressive tariff structures are in place, while slightly fewer than half had norms and procedures for financial sustainability and viability of water schemes. A few countries reported the use of subsidies or micro-credit programmes to promote use of water-saving technologies.

50. Several key challenges confronting implementation of integrated water resources management, among others, include, among others: lack of technical information and capacity, lack of strong legal and policy framework, difficulties in ensuring the effective participation of all stakeholders, poor land use practices with negative impacts on water resources, lack of a political platform to promote integrated water resources management at all levels and poor sanitation leading to poor water quality.[22] In this regard, linking the integrated water resources management approach to the appropriate national development planning process is considered vital to realizing the full potential of water management in achieving the other Millennium Development Goals.

2. Agricultural water management

51. Agriculture continues to be the largest user of global water supplies, accounting for more than 70 per cent. This share will probably increase significantly, given growing water scarcity. While in the past, groundwater provided a profitable new resource, it is now overexploited in many basins.[23] Policies in many countries now favour improvements in the performance of existing schemes, rather than the construction of new systems. This is considered important to reducing water losses in poorly maintained water delivery systems. Water user associations have proved effective in modernization programmes, and many countries indicated the value of a strong role for user participation in decision-making processes related to irrigation water management. Projected water stress, especially as result of climate change, will create a strong push to improve water productivity and to strengthen the use of demand management approaches.

52. Sub-Saharan Africa is the poorest region in the world, but has a large untapped endowment of water resources. Thus, changes in agricultural water management could help in reducing poverty in this region. In most areas of sub-Saharan Africa, conditions combine to keep farmers locked in a poverty trap of low-yielding subsistence strategies. Yet less than five per cent of renewable water resources are abstracted, and only four per cent of agricultural land is under irrigation. Integrated investments in agricultural water infrastructure, together with markets, technology, institutions and human development, could help increase incomes and reduce poverty, offering sub-Saharan Africa the prospect of economic growth that Asian countries have so successfully pursued.

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[22] Technical Committee GWP Policy Brief 4 http://www/gwpforum.org/gwp/library/Policy_brief_4_MDGS.pdf.

[23] Reengaging in Agricultural Water Management: Challenges and Options, World Bank Directions in Development, Washington, D.C., 2006.

C. Strengthening water sector monitoring

53. In many developing countries, key information and data needed to get full coverage of the water sector are missing: for example, data on water productivity is not available in a systematic way; gender-related information is not readily available; information on wastewater production and treatment is still anecdotal; and very little is known about water quality. Disputes over water issues, a rapidly growing concern, are not reported in a systematic way, except in the case of transboundary waters. Lack of information and data on groundwater drawdown remains a major challenge.

54. Concerning the state of water sector monitoring, a recent review[24] concluded, inter alia, that:

(a) most of the global water databases and monitoring systems contain data retrieved from other sources collecting primary data;

(b) no formal mechanism exists to monitor progress on implementation of integrated water resources management plans;

(c) country-level data on water quantity is more widely available than water quality data;

(d) several major monitoring programmes suffer from irregular updating, which affects their timely and regular reporting capacity; and

(e) data quality remains a major issue in assessing the reliability of monitoring systems.

55. Although political commitment to and awareness of water sector monitoring is on the rise, several challenges remain. For example, the main thrust of several monitoring initiatives is water and sanitation services exclusively, while several other elements of the water and sanitation sector (e.g. economic, governance, environmental aspects of water management) have not received due attention. There are no indicators to monitor integrated water resources management. Key obstacles impeding effective sector monitoring include limited technical and institutional capacities at the national and local levels, insufficient allocation of financial resources in national budgets for monitoring activities, inadequate information systems and continuous deterioration of monitoring infrastructure.

56. Despite these constraints and gaps in water sector monitoring, several efforts are noteworthy. The Joint Monitoring Programme of WHO and UNICEF is still regarded as the most relevant mechanism for tracking progress on water and sanitation targets. Tracking progress is based not only on secondary information but on field surveys as well. However, discrepancies have been noted in some cases between the joint monitoring programme data and national figures, due to methodological differences. For example, a recent survey[25] of 4,833 drinking points in Togo revealed, inter alia, that about 30 per cent of these water schemes had been out of order for more than one year, suggesting that the real access rate is much lower than that estimated and reported by JMP. Overestimating the access rate on

[24] Water Monitoring, Mapping Existing Global Systems and Initiatives; Background Document prepared by FAO on behalf of the UN-Water Task Force on Monitoring, 2006.

[25] Updating the Situation of the Drinking Water Supply Sub-sector in Rural and Semi-urban Areas of Togo: DGEA/AFD Survey, Ministry of Water and Hydraulic Infrastructure, 2006.

the basis of infrastructure existence alone without taking into account functional status leads to underestimation of the investments required to meet the Millennium Development Goals targets. Addressing such discrepancies should be an important element of efforts to strengthen existing monitoring mechanisms.

57. The World Water Development Report[26] by UN-Water provides a periodic, comprehensive review of the state of the world's freshwater resources. In addition to this effort, several other institutions are taking steps to strengthen their monitoring and evaluation systems for the water and sanitation sector. For example, the African Development Bank is now counting the people who benefit from the Rural Water Supply and Sanitation Initiative for Africa. Similarly, some private operators are measuring and reporting their own contribution to the Millennium Development Goals.[27]

58. Monitoring investments in the water sector requires particular attention, especially with regard to monitoring donor fulfilment of aid commitments and efficient spending of budgetary allocations of national Governments in the water and sanitation sector. In general, most national budgets indicate allocations of financial resources for these sectors, but systems to monitor such investments and their impact on meeting water and sanitation targets are insufficiently developed, with the exception of some countries, including Malaysia and Singapore.

59. Monitoring of investment in irrigated agriculture is especially weak, probably due to the lack of internationally agreed targets on this specific issue. Simple country-to-country comparisons on water productivity in agriculture sector are not available. For hydropower development, monitoring of investment and results tends to be project-oriented rather than focusing on the level of integrated water resources management, although there are recent and ongoing efforts in several countries at the basin level, such as the Nam Ngum project in the Lao People's Democratic Republic.

60. In recent years, UN-Water has been promoting system-wide coordination and coherence to advance the implementation of global water and sanitation goals. It has established several thematic task forces that are facilitating information exchange, including sharing of experiences and lessons learned, to add value to existing programmes and projects. Its work programme is further supported by three offices: one each for capacity-building, monitoring and reporting, and outreach and communication.

D. Financing water and sanitation services

61. Multilateral donors now account for approximately 33 per cent of aid flows, up from 20 per cent in 2000, with the World Bank's International Development Association and the European Union (including its Water Initiative) the most prominent. Multilateral funding has been more focused on low-income countries and sub-Saharan Africa than bilateral assistance has been. Since 1998, annual International Development Association lending to the water and sanitation sector

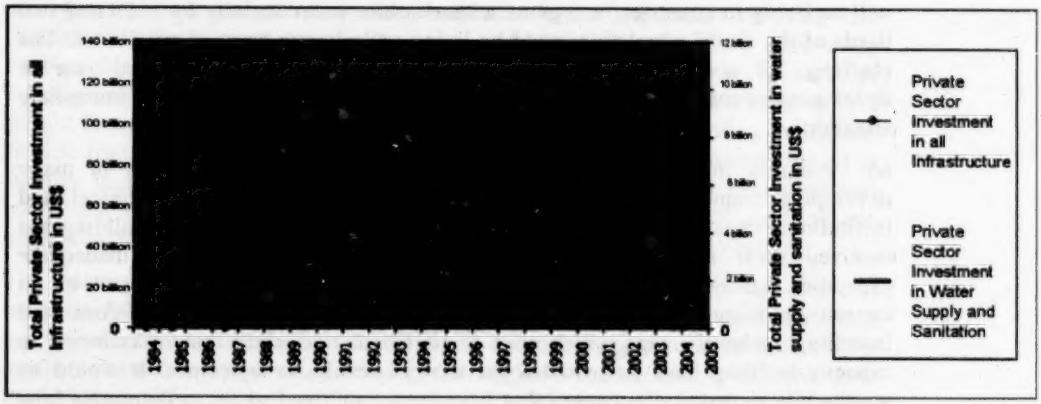
[26] World Water Development Report, 2006. http://www.unesco.org/water/wwap/wwdr/index.shtml.

[27] For example, Suez reports the following figures for its water operations in low income countries (as of 2007): "... during the period of involvement of Suez as operator, 11 million additional people have gained access to safe drinking water (including 9.2 million through home connections), and 5.3 million to improved sanitation".

has averaged $478 million, increasing steadily to $585 million in 2006. Much of the International Development Association assistance to water supply and sanitation has been as one component in the context of multi-sector rural and urban development and social protection projects. Like Government spending on water and sanitation, aid flows tend to be skewed towards urban populations. Financing of large-scale water and sanitation infrastructure, mainly in urban areas, accounts for over half of all aid to the sector.[28]

62. Private sector investment in all infrastructures increased dramatically in the early 1990s, reaching its peak in 1997. The private sector investment flows to the water and sanitation sector also reached their peak level in 1997, but have been very erratic and declined to $1 billion in 2003. (figure I)

Figure I
Private sector investment in infrastructure, 1984-2005



Source: World Bank Private project investment database (http://ppi.worldbank.org/).

63. Total official development assistance (ODA) from members of the OECD Development Assistance Committee fell by 5.1 per cent in 2006 to $104 billion, which represented 0.30 per cent of members' combined gross national income. In real terms, this is the first fall in ODA since 1997, though the level is still the highest recorded, with the exception of 2005. Excluding a spike in development assistance for Iraq, total development assistance for water and sanitation amounted to $3.4 billion in 2004.[29] In real terms, water and sanitation aid levels in 2005 were lower than in 1997, a marked contrast to education, whose aid commitments doubled over the same period, and a contrast to aid commitments in health as well.[30] Moreover, aid to water and sanitation has fallen as a share of overall development assistance. It declined from 8 to 5 per cent, even though the important role of water and sanitation in meeting other development goals is clearly recognized.

[28] UNDP, Human Development Report, p. 68, 2006.
[29] UNDP, Human Development Report, p. 67, 2006.
[30] Water Aid, Global Cause and Effect (2007) and UNDP, Human Development Report, p. 67, 2006.

64. About half of the $30-35 billion invested globally in irrigation and about $2.5 billion for water supply and sanitation each year are financed through Government budgets. With regard to the recommendation that countries allocate a specific and adequate budget for sanitation, countries have adopted different strategies and mechanisms. For example, Senegal has allocated budgets for sanitation (2004-2006) from its domestic resources, from its HIPC resources (for sanitation in secondary cities) and from external resources for strengthening capacities.

III. Continuing challenges and opportunities

65. Factors such as population growth, rural to urban migration, and unsustainable consumption patterns are affecting both the quantity and quality of freshwater resources. Projected climate change is likely to intensify the stress on available freshwater resources. Continuation of present trends means that 1.8 billion people will be living in countries or regions with absolute water scarcity by 2025 and two thirds of the world population could be living under water-stressed conditions. The challenge of saving the lives of three million people who die each year in developing countries due to waterborne diseases continues to deserve immediate attention.

66. Progress in the implementation of water and sanitation targets in many developing countries continues to be held back by inadequate technical and institutional capacities. Ironically, over the last decade or so, capacity-building has received great attention in technical assistance programmes, but inadequate capacities remain an important constraint on achieving the agreed targets, as do capacity-building approaches which are inappropriate to local conditions and inability to identify gaps which need to be filled. It is clear that investments in capacity-building have not yielded the desired results or outcomes. It would be worthwhile to revisit approaches that have been employed so far to determine how these could be made more effective. Other difficulties and obstacles include lack of financial resources; inefficient institutions, policies, laws and regulations; lack of understanding and awareness about integrated water resources management and its relationship to poverty reduction; and limited success in raising funds from local capital markets and the private sector for infrastructure development.

67. Addressing these challenges requires multidimensional efforts systematically targeted at key bottlenecks. Constraints and opportunities vary in each country and even within different parts of a country. There is no one-size-fits-all solution. Stronger dialogue between various stakeholders (Governments, donors, civil society, communities and United Nations organizations) is required to conduct sector-wide analyses to identify critical shortcomings and propose policy solutions. Failure to scale up successful experiences requires serious evaluation with focus on the way forward.

68. Meeting an ever-rising demand for food, while, at the same time, reducing poverty and protecting the environment, remains an important challenge in achieving sustainable development in the face of increasingly constrained water resources. In recent years there have been significant advances in enhancing water productivity in agriculture. Known techniques for soil moisture conservation and water harvesting, and some technologies for rain-fed areas such as low-cost

supplemental irrigation, can have high returns. Incentives need to be provided to promote these technologies.

69. Provision of water and sanitation services requires simultaneous actions on many fronts, ranging from capacity-building of public utilities to rehabilitation of existing infrastructure to improved institutional governance. Progress is being made, but these actions need to be intensified at all levels and by all players. Depending upon the specific country situation, these actions should give due attention to providing connection subsidies, promoting differentiated services, making provisions for incorporating alternative service providers, and considering the provision of subsidies to low-income households not relying on the public network. Similarly, Water Operators Partnerships provides an opportunity for promoting South-South cooperation as well as public-private partnerships on a not-for-profit basis to strengthen the institutional and technical capacities of public water utilities in provision of sustainable services.

70. The progress made in the development of integrated water resources management plans and the increasing emphasis on the importance of water and sanitation in the current round of poverty reduction strategies have been quite encouraging. These trends need to be sustained, but will require strong support from development partners in capacity-building and technology transfer. Future efforts should focus on improving survey methodologies, including monitoring indicators, so that results can be used to take corrective actions during implementation. It is equally important to demonstrate how investments in water and sanitation can contribute to sustainable development, transforming the lives of poor people especially, rather than providing benefits measurable only in monetary terms.

71. Monitoring progress on internationally agreed targets is critical to guide and mobilize future actions to accelerate the implementation of water and sanitation goals and achieve sustainable development. In this regard, current monitoring mechanisms need strengthening at the global, regional and national levels, and their methodological limitations must be addressed. Further work is needed on indicators to monitor progress on integrated water resources management. Moreover, there is a need to establish stronger linkages, not only among various global mechanisms, but also between global mechanisms and monitoring efforts at the national level.